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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/081,401	02/22/2002	Kelly Daly Flynn	2071	1558

24963 7590 07/29/2004

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EXAMINER	
BLACKWELL RUDASIL, GWENDOLYN A	
ART UNIT	**PAPER NUMBER**
1775	

DATE MAILED: 07/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/081,401	FLYNN, KELLY DALY
	Examiner	Art Unit
	Gwendolyn A. Blackwell-Rudasill	1775

S.C

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 May 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-15 and 17-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-15 and 17-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 February 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 3, 2004 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> *The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.*

3. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims setting forth physical characteristics in an article, and not setting forth specific compositions, which would meet such characteristics, are invalid as vague, indefinite, and functional since they cover any conceivable combination of ingredients either presently existing or which might be discovered in the future and which would impart the desired characteristics. *See Ex parte Slob, 157 USPQ 172.*

Claim Rejections - 35 USC § 102/103

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> *A person shall be entitled to a patent unless –*
>
> *(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.*
>
> *(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.*

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> *(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.*

6. Claims 1, 3-15 and 17-19 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over United States Patent no. 6,108,295, Ohno et al.

Regarding claims 1 and 3-8

Ohno et al disclose an optical information recording medium that incorporates a phase change alloy used in an optical disk, (column 1, lines 5-29). Recording/erasing is carried out by a three power level modulation, (column 16, lines 34-67). The phase change alloy is used in the recording layer made of a thin film of $M_y(Sb_xTe_{1-x})_{1-y}$ wherein $0 \leq y \leq 0.3$, $0.5 \leq x \leq 0.9$ and M_y can be In, meeting the requirements of claims 1 and 3-7, (column 4, lines 38-61). A chemical composition and its properties are inseparable. *MPEP 2112.02.* Because the prior art

exemplifies the applicant's claimed phase change alloy formula, the claimed physical property relating to the X-ray diffraction is inherently present in the prior art, meeting the requirements of claim8.

Regarding claims 3-7

Ohno et al does not specifically exemplify the specific formula of the phase change alloy as claimed by Applicant. Although Ohno et al do not disclose specific examples of the presently claimed formula, the range for the ratio of Sb/Te is entirely encompassed by the ranges of Ohno et al. Absent a showing of unexpected results with the claimed limited range, no patentable distinction is seen.

Regarding claim 9- 15 and 19

Ohno et al disclose an optical information recording medium that incorporates a phase change alloy used in an optical disk, (column 1, lines 5-29). Recording/erasing is carried out by a three power level modulation, (column 16, lines 34-67). A eutectic base alloy such as SbTe and a dopant such as In, which is added to the eutectic alloy, to create an alloy that effectively increases the crystallization temperature. The phase change alloy is used in the recording layer made of a thin film of $M_y(Sb_xTe_{1-x})_{1-y}$ wherein $0 \leq y \leq 0.3$, $0.5 \leq x \leq 0.9$ and M_y can be In. The phase change alloy is present in a crystallized and amorphous state, meeting the requirements of claim 9 and 11-12, (column 9, lines 29-48). A chemical composition and its properties are inseparable. *MPEP 2112.02.* Because the prior art exemplifies the applicant's claimed phase change alloy formula, the claimed physical properties relating to the X-ray diffraction and sigma-to-dynamic range as well as the detectable levels are inherently present in the prior art, meeting the requirements of claims 9-10, and 13-14

Regarding claims 17-18

Ohno et al does not specifically disclose the specific formula of the phase change alloy as exemplified by Applicant. Although Ohno et al do not disclose specific examples of the presently claimed formula, the range for the ratio of Sb/Te is entirely encompassed by the ranges of Ohno et al. Absent a showing of unexpected results with the claimed limited range, no patentable distinction is seen.

7. Claims 1, 3-4, 8-15, and 17-19 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over United States Patent Application Publication no. 2002/0160305, Horie et al.

Regarding claims 1, 3-4, and 8

Horie et al disclose an optical recording medium having a recording layer comprised of a Sb-Te eutectic composition having the formula Sb_xTe_{1-x} wherein $0.75 \leq x \leq 0.9$, (page 2, section 0019). A dopant such In can be added to the eutectic composition in order for fine adjustment of optical constants of the recording layer or suppression of nucleation, (page 6, sections 0079-0080). The eutectic composition, including the dopant, has the formula $M_y(Sb_xTe_{1-x})_{1-y}$ wherein $y \leq 0.2$, and x is defined above, (page 6, section 0081). The recording layer can be applied to recording mediums having multi-level recording, meeting the requirements of claims 1 and 3-4, (page 17, section 0203). A chemical composition and its properties are inseparable. *MPEP 2112.02.* Because the prior art exemplifies the applicant's claimed phase change alloy formula, the claimed physical property relating to the X-ray diffraction is inherently present in the prior art, meeting the requirements of claim 8.

Regarding claims 3-4

Horie et al does not specifically exemplify the specific formula of the phase change alloy as claimed by Applicant. Although Horie et al do not disclose specific examples of the presently claimed formula, the range for the ratio of Sb/Te is entirely encompassed by the ranges of Horie et al. Absent a showing of unexpected results with the claimed limited range, no patentable distinction is seen.

Regarding claim 9-15 and 19

Horie et al disclose an optical recording medium having a recording layer comprised of a Sb-Te eutectic composition having the formula Sb_xTe_{1-x} wherein $0.75 \leq x \leq 0.9$, (page 2, section 0019). A dopant such In can be added to the eutectic composition in order for fine adjustment of optical constants of the recording layer or suppression of nucleation, (page 6, sections 0079-0080). The eutectic composition, including the dopant, has the formula $M_y(Sb_xTe_{1-x})_{1-y}$ wherein $y \leq 0.2$, and x is defined above, (page 6, section 0081). The recording layer can be applied to recording mediums having multi-level recording, meeting the requirements of claims 9, 11-12, and 15, (page 17, section 0203). A chemical composition and its properties are inseparable. *MPEP 2112.02.* Because the prior art exemplifies the applicant's claimed phase change alloy formula, the claimed physical properties relating to the X-ray diffraction and sigma-to-dynamic range as well as the detectable levels are inherently present in the prior art, meeting the requirements of claims 9-10, 13-14, and 19.

Regarding claims 17-18

Horie et al does not specifically disclose the specific formula of the phase change alloy as exemplified by Applicant. Although Horie et al do not disclose specific examples of the

presently claimed formula, the range for the ratio of Sb/Te is entirely encompassed by the ranges of Horie et al. Absent a showing of unexpected results with the claimed limited range, no patentable distinction is seen.

Response to Arguments

8. Applicant's arguments filed May 3, 2004 have been fully considered but they are not persuasive.

Applicant contends that Ohno et al does not disclose a multi-level recording medium nor specific examples of an alloy having the formula $In_x(Sb_nTe_{1-n})_{1-x}$ wherein x is 9-30 and n is 63-82. Applicant also contend that the ranges as of n and x as exemplified are critical as ranges used in the aforementioned formula provides advantages over the use of AgInSbTe as the recording layer.

9. Ohno et al demonstrates that recording/erasing is carried out by a three power level modulation which can be multi-level recording, (Ohno et al, column 16, lines 34-67).

While some of the specific embodiments disclosed by Ohno et al include silver, Ohno et al has specifically disclosed, (column 4, lines 54-55), that M_y need only be at least *one* of the elements and not one element *in addition* to silver. While an inventor may include preferred embodiments of a disclosed invention, there is no requirement that an inventor include every possible example or embodiment that can be used with the disclosed invention. The fact that Ohno et al disclosed that In could be used in the phase change recording layer wherein the composition of the components encompass the compositional range as exemplified by Applicant is enough to show that In can be used as part of the SbTe phase change material. The use of In as the metal to shift the eutectic point of the matrix SbTe in order to increase the amount of

excess Sb and increase the linear velocity, (Ohno et al, column 10, lines 47-63). There is nothing in the specification that states that In can only be in conjunction with Ag.

As such, the rejections relating to present claims 1, 3-15, and 17-19 stand.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gwendolyn A. Blackwell-Rudasill whose telephone number is (571) 272-1533. The examiner can normally be reached on Monday - Thursday; 6:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gwendolyn A. Blackwell-Rudasill
Examiner
Art Unit 1775

gbr

DEBORAH JONES
SUPERVISORY PATENT EXAMINER